Drought Impacts and Solutions in the Recreation and Tourism Sectors

The fifth in a series of Western Governors’ Drought Forum workshops

January 28-29, 2015
Santa Fe, New Mexico

Under the leadership of Western Governors’ Association Chairman, Governor Brian Sandoval of Nevada, industry leaders, state experts and stakeholders are sharing best practices for drought management through the Western Governors’ Drought Forum. A key element of the Forum is an ongoing series of sector-specific workshops to identify drought impacts, solutions, success stories and case studies.

Workshop Take-Aways

For the fifth Drought Forum workshop, Drought Impacts and Solutions in the Recreation and Tourism Sectors, findings can be summarized in the following categories:

Culture

Public Messaging: Public acceptance of water conservation measures is dependent on how these initiatives and technologies are messaged. Steering away from words like “xeriscaping” and “low-flow appliances,” which now have a negative connotation due to lackluster results and acceptance, while embracing new branding terms can help garner public support for water conservation measures.

Pivoting to other opportunities: Water is a prime attraction at many tourist destinations in the West. During drought the media tends to highlight the lack of surface water availability at these locations. To mitigate negative press coverage and public assumptions based on drought disaster declarations, states need to make clear that low lake levels does not mean no recreation. For example, during times of low reservoir elevations, motorized boating may decrease in popularity, but paddle-craft usage greatly increases.

Workshop Notes and Highlights

The fifth workshop of the Drought Forum meeting series, focusing on drought impacts and solutions in the recreation and tourism sectors, was held Jan. 28-29, 2015 in Santa Fe, New Mexico. Introductory remarks were given by Keith Gardner, Chief of Staff for Governor Susana Martinez.

Gardner commented on the extreme level of drought that New Mexico experienced in recent years and the wide-reaching implications of that drought.
“New Mexico is surpassing even the worst Dust Bowl periods in terms of drought conditions. When the last four consecutive years of drought are combined with the drought dating back to 2002, the impacts are staggering. The Rio Grande is completely dry in spots, and some agricultural wells are running dry,” Gardner said.

Gardner highlighted recent actions taken by the governor, stating, “In response to extreme drought, Governor Susana Martinez created the Governor’s Drought Task Force. The Task Force identified four key areas to focus government efforts on: drinking water supply, agriculture, watershed health, and recreation and tourism impacts. Another focus of Governor Martinez in recent years has been water infrastructure maintenance, especially in rural areas that do not have the capital to take on projects themselves.”

Gardner concluded with a call for better collaboration amongst Western states on drought management and messaging: “Collaboration and competition are not mutually exclusive. We can compete with each other while also collaborating together to showcase all that the West has to offer.”

A summary of key findings from the workshop follows. For more information, visit westgov.org/drought-forum or email WGA Policy Advisor Carlee Brown at cbrown@westgov.org.

What is Drought? How Drought Manifests Itself in New Mexico and the West

Findings and Observations

- “What we really need to do is break the nexus between short water supplies and the drought. In people’s minds, the correlation to drought is lack of rain, lack of precipitation. Once it rains, people say ‘Yippee, we’re done!,’ but in reality we’re not.” – Tom Blaine, State Engineer, New Mexico Office of the State Engineer
- “Drought moves around in the West, but New Mexico has been at the epicenter of drought for some time. Since 2002, New Mexico has been more or less in a constant state of drought with only intermittent relief. Our current situation appears to be improving as it looks like drought conditions may lift slightly.” – Sam Fernald, Director, New Mexico Water Resources Research Institute
- “It is essential to remember that rivers are dictated by hydrologic boundaries, not political ones. We need to find regional solutions to these issues so that managers are not constantly resorting to litigation.” – Amy Haas, Acting Director and General Counsel, Interstate Stream Commission
- “The drought in New Mexico peaked in 2013 when almost half of the state was in the most extreme drought stage on the Drought Monitor, exceptional drought, and 100% of the state was experiencing some form of drought.” – Amy Haas, Acting Director and General Counsel, Interstate Stream Commission
- “We have exciting opportunities to make our water portfolio more robust through the New Mexico statewide water assessment. The assessment will identify potential sources of new water in the form of brackish water, produced water, and forest thinning to
increase water yield. The statewide water assessment will also yield opportunities to better manage our water through improved evaporation estimates.” - Sam Fernald, Director, New Mexico Water Resources Research Institute

- “Currently in New Mexico we have water supply problems, drought or not. Groundwater is being mined quicker than it can be recharged. We need to focus our efforts on planning for shortage, conservation, and water reuse efforts.” – Tom Blaine, State Engineer, Office of the State Engineer

Possible Solutions
- “Drought has an impact on growth. If you are using all of the water you can, then you need to start trading uses of water. Theoretically, for municipal growth to continue water must be taken from agriculture. To prevent this we have to increase water conservation, reuse, brackish water desalination, importation, and transfers. If we fail to address future water shortages through these means, then the only other option is to stop growing. This is a nuclear option, but it demonstrates the importance of planning and preparing for shortages.” – Tom Blaine, State Engineer, New Mexico Office of the State Engineer
- “One of the ways that we make sure that interstate compact obligations are satisfied is through managing the various environmental mandates to which we are subject. In 2005 the state legislature enacted the Strategic Water Reserve, which allows the Interstate Stream Commission to acquire water rights for Endangered Species Act compliance as well as to fulfill compact agreements with downstream states.” – Amy Haas, Acting Director and General Counsel, Interstate Stream Commission
- “The Ute Reservoir was created as a means of moving water from the northwest to the southeast. It took 60 years to get the reservoir project through the legislature; reservoir planning started in the ‘50s and construction started in 2010. If we wait until drought is already upon us to plan and implement water projects, then we are already way behind the curve.” – Tom Blaine, State Engineer, New Mexico Office of the State Engineer
- “Water is a management tool in itself. If you don’t manage water resources well, it will limit the amount of growth that you can experience. We will look at the cost of investments in desalination, importation, and assess how much we are willing to pay for those resources. It comes down to the direct nexus between water and life; without water, there is no life.” – Tom Blaine, State Engineer, New Mexico Office of the State Engineer

Drought Impacts and Strategies for Recreation and Tourism

Findings and Observations
- “Planning for drought at the local level is extremely beneficial for recreation and tourism operations. For every dollar spent on preparation and planning, $7 are saved in response and mitigation after a disaster occurs.” – Olga Wilhelmi, Project Scientist, National Center for Atmospheric Research
- “A robust recreation and tourism economy is vital to rural economies in the West. Seasonal workers in the recreation and tourism industry have a lot at stake, so
disruptions to the sector through natural disasters are especially hard on them.” – Toner Mitchell, New Mexico Public Lands Coordinator, Trout Unlimited

- “Given that we are a luxury resort, people expect to be able to use a generous amount of water, but in reality water is something that I constantly worry about as a manager. When a guess leaves a room, that generates 11 pounds of laundry, and every spa treatment generates 4 pounds of laundry.” – Rich Verruni, General Manager, Bishops Lodge

- “We see drought as an opportunity to work with our ski areas. Many of them are small, so they don’t have the budget for an extensive marketing campaign on what they are doing to adapt to drought. The New Mexico True campaign presents an opportunity to work with these small, but important, operations and broadcast what opportunities exist.” – Rebecca Latham, Secretary Designate, New Mexico Department of Tourism

- “We have a lot of information available on the physical impacts of drought on the landscape, but we are severely lacking data on the economic outcomes of drought. There is a great deal of recreation that is dependent on water, and without information on the impacts of drought to businesses it is difficult to assess vulnerabilities and determine where planning efforts are best spent.” - Olga Wilhelmi, Project Scientist, National Center for Atmospheric Research

Possible Solutions

- “The New Mexico Department of Tourism devised a new marketing program, New Mexico True, aimed at changing the perception that the state is an arid desert by highlighting New Mexico’s many recreational opportunities involving water. The campaign is only three years old, but we’ve seen remarkable growth in tourism since its inception.” - Rebecca Latham, Secretary Designate, New Mexico Department of Tourism

- “We need to promote public-private data sharing efforts amongst regions and organizations so we can better develop resiliency and drought mitigation strategies that minimize the impact of drought on local economies. We need to engage stakeholders from the bottom-up to encourage local businesses to share information on revenue.” – Olga Wilhelmi, Project Scientist, National Center for Atmospheric Research

- “Water managers and state governments need to invest in watershed restoration programs to both prevent wildfires and restore watersheds after they experience severe wildfires. Erosion is a huge issue for fishing and other types of water-based recreation. Leaders need to engage more diligently on holistic forest planning processes and regional water processes.” – Toner Mitchell, New Mexico Public Lands Coordinator, Trout Unlimited

Working with Communities and Stakeholders

Findings and Observations

- “There’s a perception of recreation requiring an exact amount of flow in the river. In reality recreational flows exist on a range. Sometimes they can be too low. Sometimes they’re too high to be safe. With this knowledge, we step away from an exact target flow for the river and embrace an ideal range of flows.” – Nathan Fey, Director, Colorado River Program, American Whitewater
“Drought is a silent disaster: there is never an obvious beginning, and it is never clear when one will end. When you are in the midst of one you cannot escape the impacts. From impacts to cattle operations to destruction of cultural sites, tribal entities are extremely impacted by drought.” – Myron Armijo, Tribal Representative, State of New Mexico

“Tourism is an export economy. We rely on non-residents to travel to our destinations. Maintaining and marketing quality of life in tourism destinations is essential to driving economic expansion and bringing in new businesses.” – Diane Shoher, Executive Director, Wyoming Office of Tourism; Chair, Western States Tourism Policy Council

“Part of the reason that tourists come to New Mexico is the tribal culture. There are Native-operated casinos and many skilled Native American artisans that add valuable tourism dollars to the New Mexico economy.” – Myron Armijo, Tribal Representative, State of New Mexico

**Possible Solutions**

- “There is a lot to be gained from coordinating with reservoir operators. Releasing water to fulfill downstream obligations in a slower, more controlled manner, as opposed to all in one pulse, allows recreation opportunities on rivers for a longer time period. Through communication and coordination outfitters can gain increased operational certainty, even in the face of drought.” – Nathan Fey, Director, Colorado River Program, American Whitewater

- “Colorado experienced similar levels of drought in both 2002 and 2012. Both years impacted the economic benefits of recreation on the Colorado River, but 2002 was far worse economically than 2012. The 2012 drought took less of a toll economically because we were able to negotiate with water suppliers to keep a specific range of water in the river to support more user days as a part of meeting downstream obligations.” – Nathan Fey, Director, Colorado River Program, American Whitewater

- “Data on reservoir levels is a useful management tool, but the media has a tendency to sensationalize this and overstate the impacts of low reservoir levels. It is essential to broadcast that there are still ample opportunities for recreation, even if the reservoirs are significantly depleted. Our approach was to take media personnel out on Elephant Butte Reservoir and demonstrate that even at 5% of full, there is still a vast amount of surface area open for water recreation.” – Toby Velasquez, Chief of Boating and Law Enforcement, New Mexico Energy, Minerals and Natural Resources Department

**Innovative Approaches to Drought**

**Findings and Observations**

- “We look at snowmaking as a method of water banking. Water is stored as snow in the winter and then returned to the system in the spring, available for use in river recreation, agricultural, and municipal uses. Ninety percent of the water that we store as made snow, goes back into the river system after it melts.” - Gordon Briner, CEO, Taos Ski Valley
• “Just about every advance in irrigation technology has roots in golf. Computer-controlled irrigation systems were being utilized on golf courses as far back as 1979. Irrigation efficiency is critical to the golf industry, and that is demonstrated in an estimated 15% reduction in water use at golf courses across the entire country from 2006 to 2009.” – Forrest Richardson, Forrest Richardson & Assoc. Golf Course Architects

• “Healthy forests are the key to a healthy watershed. Ski areas promote healthy watersheds through thinning trees and other best management practices. In terms of wildfire risk, ski runs create fire breaks, and the same water guns used in snowmaking can also be used to fight wildfires.” – Gordon Briner, CEO, Taos Ski Valley

• “Travelers are becoming increasingly environmentally-conscious and choosing hotels that employ sustainability programs. To accommodate this, Travel Oregon is starting a program called the Sustainable Business Challenge that incentivizes recreation and tourism to embrace sustainable business practices through prioritized business listings, inclusion in newsletters and outreach and recognition in the official Travel Oregon Visitor Guide.” – Todd Davidson, Director, Travel Oregon

• “The golf industry is a lightning rod for criticism during drought, but in reality golf courses have heavily invested in water re-use and efficiency. Additionally, a high percentage of water used for irrigation on golf courses gets returned to the system as groundwater.” – Forrest Richardson, Forrest Richardson & Assoc. Golf Course Architects

• “When people move here from the East, they plant in their yards what they were used to seeing back home. I can’t blame them for that. We have to teach people to plant things that sip, not gulp.” – Scott Canning, Horticulture and Special Projects Director, Santa Fe Botanical Garden

Possible Solutions

• “Oregon Department of Fish and Wildlife does not have a formal program to transport fish from river systems that are expected to go dry. This year, a chapter of Trout Unlimited partnered with Oregon Department of Fish and Wildlife to salvage 7,000 fish from a drying tributary of the Deschutes River.” – Todd Davidson, Director, Travel Oregon

• “Snowmaking technology is much better than a decade ago; the quality of made snow is very close to natural snow. We still have to fight the perception of drought, however. We work to actively message that even though it hasn’t been snowing in the Taos Valley, a great ski experience can still be had thanks to snowmaking technology.” – Gordon Briner, CEO, Taos Ski Valley

• “The Oregon Department of Fish and Wildlife utilizes a collective hatcheries system. Many inland fish hatcheries have very senior water rights so they have guaranteed water to raise fish. Coho Salmon - coastal fishes - are raised in inland hatcheries to guarantee available water early in life. The Coho smolts are then trucked out to basin hatcheries for overwintering when water stress is lower.” – Todd Davidson, Director, Travel Oregon

• “We have employed numerous strategies to realize significant water savings at the Hotel Andaluz. We utilize dual flush toilets, high performance shower heads, hot water heated by solar panels, rainwater capture, and the restaurant in the building re-uses water that
is left after meals for mopping and cleaning.”  

Darin Sand, Vice President of Development, Goodman Realty

- “There is a shift in the way golf courses are being designed and managed to promote water efficiency. We are reducing the amount of managed turf and taking advantage of turf reduction credit programs, increasing naturalization through less groomed areas, and planting salt tolerant grasses that can utilize brackish or re-used water.” – Forrest Richardson, Forrest Richardson & Assoc. Golf Course Architects

- “We are currently working to renovate the Windrock Mall in Albuquerque into a new urban town center. The city center will have an on-site water treatment system to reuse water for water features, an ice rink in the winter, and landscape irrigation.” – Darin Sand, Vice President of Development, Goodman Realty

- “I don’t use the word ‘xeriscape’ anymore due to the negative connotation with it. Instead we are branding plants as ‘Plant Select’ or ‘Watersmart Plants’. Xeriscaping is a marketing term that has been used for over forty years and in some places is associated with removing all irrigated landscape in favor of gravel and stone, which adds to the urban heat island effect. We wish to promote plants, and show that water savings don’t have to come at the cost of beautiful landscaping.” – Scott Canning, Horticulture and Special Projects Director, Santa Fe Botanical Garden

Policy Approaches

Approaches

- “This past legislative session we decided to allocate 60% of our capital outlay dollars to water and wastewater infrastructure. Infrastructure improvements were prioritized in vulnerable rural communities that have had a water shortage or had a failing wastewater system. These small communities don’t have the debt capacity to take on water projects, so their infrastructure often declines.” – Jeff Kendall, General Counsel, New Mexico Environment Department

- “There is an important nexus to recognize between federal water policy and state water use. There are more constructive and proactive roles that the federal government can play to encourage cooperative and collaborative local solutions.” – Jimmy Hague, Director, Center for Water Resources, Theodore Roosevelt Conservation Partnership

- “We are launching a water awareness campaign targeted at rural communities and schools that will educate citizens on the value of water and how to use it more wisely. In the coming months, we will get out and talk about water and how important it is for communities to take actions that increase water sustainability.” – Jeff Kendall, General Counsel, New Mexico Environment Department

- “The Colorado Department of Public Health and Environment is acutely aware of the impacts to water quality and recreation when water is transferred from the West Slope to the Front Range. To mitigate these impacts we are pushing to increase water use efficiency on the East Slope through increasing re-use and allowing gray water harvest.” – Martha Rudolph, Director of Environmental Programs, Colorado Department of Public Health and Environment; Vice President, Environmental Council of States
Obstacles

- “Even without drought, population increase already adds stress on water resources. When drought is overlaid on top of increased demand, you need to develop innovative and creative solutions to maintain water resource security.” – Martha Rudolph, Director of Environmental Programs, Colorado Department of Public Health and Environment; Vice President, Environmental Council of States

- “In New Mexico, the regulation of water is fractured. Each agency has its own concerns. The Environment Department is tasked with managing water quality for drinking water, surface water and groundwater. However, other departments own significant portions of the regulatory responsibility, including the State Engineers Office and the Energy and Minerals Department.” – Jeff Kendall, General Counsel, New Mexico Environment Department

- “Not everyone in Congress believes that federal agencies should be funding states to use their water more efficiently. This is why programs like the Bureau of Reclamation’s WaterSMART encounter difficulties with funding. Advocacy groups like the TRCP need to promote the need for federal funding of local solutions that cascade out to solve regional problems like drought.” – Jimmy Hauge, Director, Center for Water Resources, Theodore Roosevelt Conservation Partnership

- “When it comes to fire risk management decisions, like building structures in the wildland urban interface and fire bans, we need better coordination at all levels of government, as well as with businesses and stakeholders. Regulatory decisions on both of these issues can significantly impact local communities. We need to be clear in our messaging and provide early warning when a fire ban is impending.” – Martha Rudolph, Director of Environmental Programs, Colorado Department of Public Health and Environment; Vice President, Environmental Council of States

- “The doctrine of prior appropriation creates consumptive use requirements that are conflicting with conservation practices. We need to make it so that you don’t lose your water right simply because you are implementing conservation practices. In Colorado, some people have acquired water rights for storm flow. This puts us in a tough situation in terms of water quality and conservation when we have to release water from retention ponds to satisfy these water rights.” – Martha Rudolph, Director of Environmental Programs, Colorado Department of Public Health and Environment; Vice President, Environmental Council of States

Initiatives and Opportunities

- **Colorado River System Conservation Program** – In response to declining reservoir levels and decades of drought, water providers in four Colorado River Basin states signed a water conservation agreement with the U.S. Bureau of Reclamation. As a result of the agreement, $11 million is going towards collaborative pilot conservation projects aimed at reducing water consumption in agricultural, municipal and industrial uses.
• **New Mexico Statewide Natural Resources Assessment, Strategy and Response Plans** – These plans are a partnership between ENMRD Forestry Division, The Nature Conservancy, The Forest Guild, and nearly 100 stakeholders who provide resource information. The purpose of the plans is to identify the current state of natural resource conditions, needs and opportunities across all land ownership in the state. The data of the assessment were organized around eight central themes: Biodiversity, Development Potential, Economic Potential, Forest Health, Fragmentation, Green Infrastructure, Water Quality, and Supply and Wildfire Risk.

• **New Mexico Strategic Water Reserve** – Enacted in 2005, the Strategic Water Reserve creates a pool of publicly held water rights that allow imperiled stream segments to meet in-stream flow requirements for endangered species regulations and to fulfill water delivery obligations for interstate compact agreements.

• **Wyoming Water Strategy** – Wyoming Governor Matt Mead released the Wyoming Water Strategy in 2015. The Water Strategy contains 10 initiatives put forward by local government leaders, tribal representatives, interested groups, and individual citizens. The initiatives build on existing programs, efforts and infrastructure. Detailed plans will be developed to achieve these initiatives throughout 2015.

• **Federal Land Assistance, Management and Enhancement Act (FLAME Act)** – Passed by Congress in 2009, the FLAME Act provides funding to address the impacts of increasing wildfire suppression costs and their effects on other agency programs. Funding provided under the FLAME Act reduces the need for agencies to transfer funds from other agency programs to wildfire suppression.

• **Trout Unlimited Sun River Restoration Project** – To address critically low summer base flows and deteriorating instream habitat for trout, Trout Unlimited partnered with local irrigation districts, ranchers, the Bureau of Reclamation, and Coca-Cola to secure funding for irrigation improvements and stream restoration projects. The results of the collaboration mean increased irrigation water delivery reliability and 3 billion gallons of additional stream flow for the Sun River.

• **Texas’s Regional and State Water Planning** – The population of Texas is expanding rapidly, putting additional pressure on all of the state’s natural resources, especially water. Integrated watershed-based planning and conservation are key to the future health of Texas’ aquatic ecosystems. Senate Bill 1 of the 75th Texas Legislature established the regional water planning process. The Texas Parks and Wildlife Department (TPWD) provides technical assistance through non-voting members on each regional water planning group. TPWD also provides input to the Texas Water Development Board (TWDB) regarding Water Planning Guidance Principles, population projections and water use projections.

**Resources and Technology**

• Texas Parks and Wildlife [Drought Survival Toolkit](#)

• Protect the Flows report on the economic value of the Colorado River: [Colorado River Inc.](#)
• New Mexico Governor’s Drought Task Force
• Theodore Roosevelt Conservation Partnership: Sportsmen’s Water Budget
• U.S. Bureau of Reclamation WaterSMART grants and incentives
• SoCal Turf Rebate Program